

## Homework #10

### Random Sum of Random Summands

A coin with probability of heads equal to 0.6 is tossed a first series of 10 tosses. In a second series of tosses, the same coin is tossed as many times as the number of heads in the first series. In a third series of tosses, the same coin is tossed as many times as the number of heads in the second series.

Find the expected number of heads in the first, second, and third series of tosses.

$$\begin{aligned} 1^{\text{st}} \text{ toss: } & 10(0.6) = 6 \text{ Heads} \\ 2^{\text{nd}} \text{ toss: } & 6(0.6) = 3.6 \text{ Heads} \\ 3^{\text{rd}} \text{ toss: } & 3.6(0.6) = 2.16 \text{ Heads} \end{aligned}$$